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AJ26 engine set for testing

The first Aerojet AJ26 flight engine was installed on the E-1 Test Stand at Stennis Space Center on Sept. 25. Stennis has partnered with Orbital Sciences Corporation to test the AJ26 engines that will be used to power commercial cargo flights to the International Space Station. Orbital is working with NASA to provide eight missions through 2015. Stennis operators have worked since April 2009 to modify the E-1 stand in order to test the engines.

The partnership with Orbital highlights NASA's new emphasis on working with commercial companies to provide space transportation. Testing of the AJ26 is expected to begin by the end of October.



Stennis joins Feds Feed Families effort

Employees at Stennis Space Center clearly demonstrated their commitment to meeting the needs of others when they exceeded their Feds Feed Families food donation goal by more than 400 percent.

In the first year of participation in the national Feds Feed Families food drive, Stennis set a goal of collecting 650 pounds of needed items. They collected 2,904 pounds, 447 percent more than their goal.

“We were very happily surprised,” said Jeanie Frederick, a human resources specialist at Stennis. “The final total says a lot about Stennis employees. They showed a real desire to help others, and a lot of that may be because so many of them have experienced needs related to Hurricane Katrina and such.”

The Stennis drive was spearheaded by Cabrina Bell, a program analyst in the Stennis Office of Human Capital. She coordinated efforts to deliver all Stennis donations to the Hancock County Food Pantry.

See **FEED FAMILIES**, page 5

CFC kicks off Oct. 20

Employees at Stennis Space Center will kick off their 2010 Combined Federal Campaign with announcement of a \$210,000 giving goal during an Oct. 20 ceremony.

The CFC is the largest annual workplace charity effort. Each year, its gifts support organizations providing health and human service benefits throughout the world. In 2009, Stennis employees exceeded their giving goal of \$200,000 by 16.5 percent.



From the desk of
**Sue
 Dupuis**
 Procurement Officer
 Office of Procurement



As I reflect on the history of the John C. Stennis Space Center, I look back with pride at the critical role of the NASA Office of Procurement. Throughout the years, I have observed a significant increase in workload for most organizations onsite with almost a quadrupling of the procurement workload. For example, construction dollars increased from about \$2 million in 2004 to about \$40 million in 2010.

I believe procurement has a direct impact on NASA's ability to fulfill its mission. Our office ensures efficient administration of \$1.7 billion in active contracts. In the past year, it achieved cost savings/cost avoidances of \$7.3 million through effective administration, aggressive negotiations and process improvements. Timely administration of Hurricane Katrina mitigation projects have helped ensure testing capabilities at Stennis. The A-3 Test Stand is the largest current construction project in NASA, valued at over \$377 million. Some of the world's largest liquid hydrogen/liquid oxygen run tanks have been procured, and some of the world's largest cranes are being used to lift them for installation on the new stand. How exciting to be a part of it!

Our procurement personnel have worked tirelessly in processing American Recovery and Reinvestment Act

of 2009 actions. A total of \$29 million of contracts were awarded this past year in support of improvements in center capabilities. The ARRA actions also allow for the retention of critical skills and the creation of jobs to stimulate the economy.

Another success story this past year was the transition of the National Center for Critical Information Processing and Storage, which moved from U.S. Navy management to NASA management. The change involved reassignment of major support contracts and maintenance agreements, along with procurements for construction upgrades.

In addition, NASA's Small Business Program at Stennis is very active. The goal is to provide small businesses an opportunity to participate in NASA prime contracts and subcontracts. Our fiscal year 2010 metrics show we exceeded all of our small business category goals. As part of outreach, we are partnering with the Mississippi Enterprise for Technology and other resident agencies to re-establish the Stennis Small Business Forum, which provides a mechanism for federal agencies, local institutions and businesses to exchange information on small business matters.

I have worked with many wonderful people in my career. I've enjoyed the company of many great leaders who have dutifully served – and continue to serve – their country. I will miss them when I retire at the end of the calendar year. Working for NASA has been an honor for me. I am proud of the accomplishments of our center, especially our Office of Procurement!

Sue Dupuis

Louisiana economic group visits Stennis

Members of the Louisiana Economic Development group stand near the flame trench of the A-1 Test Stand during their visit to Stennis Space Center on Oct. 5. During the daylong visit, group members were briefed by Stennis Director Patrick Scheuermann and others on ongoing work at the nation's premier rocket engine test facility. Among other things, they learned of NASA initiatives at Stennis and of small business opportunities at the center. Group members also enjoyed a windshield tour of Stennis test complexes, which included a briefing about preparations for future rocket engine testing at the facility.



FULFILLING NASA'S EXPLORATION MISSION

Stennis prepares for future testing

Work on the first large rocket engine test structure to be built at Stennis Space Center since the 1960s is progressing with arrival of several stand components. On Sept. 24, a 35,000-gallon liquid oxygen tank (below) was delivered to the A-3 Test Stand construction site. Delivery of an 80,000-gallon liquid hydrogen tank (bottom) followed on Sept. 30. The two tanks will provide the propellant for rocket engine tests. They will be placed upright on top of the stand, increasing the overall height to 300 feet. Once completed, the A-3 Test Stand will enable operators to test rocket engines at simulated altitudes of up to 100,000 feet.



Work continues at Stennis Space Center to prepare facilities previously used to test space shuttle main engines for testing the next-generation J-2X rocket engine now in development. Stennis concluded 34 years of space shuttle main engine testing in July 2009. Earlier this year, employees began preparing the A-1 and A-2 test stands for the J-2X engine, in development as a next-generation engine to carry humans into deep space once more. The preparation work is extensive as employees reconfigure test stand parameters for the new engine. Recently, employees at the A-2 Test Stand removed key items that were needed for space shuttle main engine testing but now must be replaced. The accompanying photo shows removal of one-half of the clamshell shroud used for testing space shuttle main engines. Testing of the J-2X engine on the A-2 Test Stand is scheduled to begin next spring.

Upcoming launch schedule

STS-133
Shuttle Discovery
Target: Nov. 1

Discovery will deliver and install the Permanent Multipurpose Module and the Express Logistics Carrier 4, and will provide critical spare components to the International Space Station.

STS-134
Shuttle Endeavour
Target: Feb. 26, 2011

Endeavour will deliver spare parts including two S-band communications antennas, a high-pressure gas tank, spare parts for Dextre and micrometeoroid debris shields.

Orbital Sciences Corporation
Taurus[®] rocket
Target: Nov. 22
Site: Vandenberg AFB

The mission will help increase understanding of Earth's energy balance by collecting data on the atmosphere and on how the sun's irradiance affects climate.

Stennis project upgrades LOX pumps

Work is under way to replace 10 Apollo-era liquid oxygen pumps at Stennis Space Center. The new pumps will replace those first installed nearly 50 years ago on barges that supply the liquid oxygen (LOX) needed to perform rocket engine tests on Stennis' four largest test stands.

"These new pumps are going to fundamentally change how we do what we do, and greatly increase the flexibility to do what we do," said Haynes Haselmaier, technical manager for the pump project.

Since the 1960s, Stennis has used a fleet of six barges – each outfitted with a 100,000-gallon tank – to store LOX and to deliver it to test stands. At times, the barges simply refill the LOX tanks on each stand in preparation for engine tests. At other times, when longer duration tests are conducted, the barges must pump LOX to supply the stand tank during the test. The requirements vary according to the stand and the test configurations, explained Bryon Maynard, project manager for the pump project.

"It's all a very intricate process, especially with the old, single-speed pumps," Haselmaier agreed. "There is a wide range of applications we routinely use these pumps for. The existing single-speed pumps don't fit all of those operational scenarios well."

Also, maintaining 45-year-old pumps has grown more expensive and time-consuming through the years.

As part of the Stennis Test Infrastructure Initiatives effort, \$1.8 million has been provided to replace the original pumps with new, more efficient and more flexible variable-speed pumps.

"This project is progressing extremely well and looks to be a real



Stennis employees inspect the new liquid oxygen pump (center rear) installed on a propellant barge at the rocket engine test facility. In the foreground is one of the original LOX pumps installed almost 50 years ago. The new variable-speed pump is smaller, more efficient, and easier to maintain and repair.

success story," said Randy Holland, acting deputy for the Stennis Project Directorate. "We are in the process of replacing or refurbishing several of our outdated systems in the test complexes."

The new pumps have half as many moving parts as the old pumps, will be much easier to maintain and repair, and will allow operators to take important temperature, pressure and amp readings.

"The old pumps had to be removed in order to be repaired, then reinstalled and realigned," Haselmaier said. "We will be able to maintain and repair the new pumps in place, and their design does not require the careful realignment that the old pumps did."

In addition, operators now will know the true parameters of the pumps and can vary their output to meet the specific pressure and flow rate needed by various stands. Special test equipment has been installed on the first new pump to help operators learn its capabilities and how to adjust it. However, Stennis operators

also have devised their own flow meter to be installed in-line with the new pumps. The new flow meter is expected to provide the same information as the special test equipment.

"The bottom line is these new pumps will provide a much higher degree of safety at a much greater level of efficiency and for considerably less maintenance cost," Haselmaier said.

One pump has been installed and tested, with engineers and operators pleased at the results. By year's end, just 10 months after the project began, all 10 barge pumps are expected to be in place.

Billy Davis, supervisor of the 11-member team responsible for maintaining and operating the LOX barges, praised the effort of the employees and emphasized the critical nature of the replacement project.

"This really is an important achievement," Davis said. "If we can't deliver liquid oxygen as needed, we can't perform large rocket engine tests. It's just that simple."

FEED FAMILIES

Continued from page 1

Based on weight, Pantry Director Frank Manchester estimates the Stennis contribution was the equivalent of feeding 32 families of three members each for six days. "We are only a supplement for needy families in Hancock County, and our numbers are steadily increasing with the current economic situation and some oil-spill effect," Manchester said. "Our post-Hurricane Katrina funds from foundations, businesses, and elsewhere are really drying up, so the Stennis Feds Feed Families drive was especially welcome. We hope it becomes an annual event."

Each area of the Stennis community not only contributed to the food drive but exceeded their donation goal. Most areas more than doubled their goals.

The director's office and the Office of Human Capital both exceeded their goals by more than 1,000 percent. The director's office was recognized for leading the way with donations that exceeded its goal by 1,120 percent.

Several other areas exceeded their goals by more than 400 percent. Every area gave at least 170 percent more than it projected.

Stennis plans to make the Feds Feed Families effort an annual event.



(Top photo) Stennis Space Center Office of Human Capital representative Cabrina Bell presents a plaque of appreciation to center Director Patrick Scheuermann and other members of the director's office in recognition of their food donations to the Feds Feed Families campaign. The director's office led the way for Stennis by exceeding their donation goal by more than 1,000 percent. Members shown are: (from left) Brian Hey and Jo Ann Larson from the Office of Diversity and Equal Opportunity, Scheuermann, Bell, Deputy Director Rick Gilbrech, Associate Director Ken Human, secretary Sandra Ladner and INFINITY Project Manager Myron Webb.

(Left photo) NASA Associate Deputy Administrator Charles Scales presents Cabrina Bell a plaque in recognition of Stennis exceeding its food donation goal by the largest margin of any agency center.

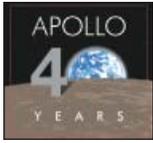
(Right photo) The Hancock County Food Pantry bears evidence of Stennis generosity.

7 Stennis employees honored for performance with NASA Frontline Awards



Seven employees at Stennis Space Center received Frontline Awards on Sept. 28 in recognition of service and leadership. NASA presents Frontline Awards to honor superior service or products, exemplary support of the Stennis mission, motivating others to higher performance, commitment to safety and outstanding community leadership. Stennis Director Patrick Scheuermann and Stennis Safety and Mission Assurance Manager Freddie Douglas presented the 2010 awards in an onsite ceremony. Recipients included: (from left) Patricia Burk and Desiree Davis with Paragon Systems Inc.; Sandy Jenkins with A2 Research; James Mirandy with the Jacobs Technology NASA Test Operations Group; John Rhodes with Bastion Technologies Inc.; Jim Sever with ASRC Research and Technology Solutions; and Terri Skinner with Lockheed Martin Information & Technology Services.

Stennis helps space program 'Return to Flight'



Note: John C. Stennis Space Center has played a pivotal role in the success of the nation's space program. This

month, Lagniappe looks back on an important moment in the center's history.

Six years ago this month, Stennis Space Center played an integral part in NASA's Return to Flight following the loss of space shuttle Columbia in 2003. Stennis shipped the last of shuttle Discovery's three main engines to Kennedy Space Center in Florida for installation on the orbiter, readying it for the STS-114 mission to the International Space Station.

In 2004, the three space shuttle main engines that would power the STS-114 mission passed final acceptance tests at Stennis on March 26, July 16 and Aug. 19.

"Our NASA and contractor team has continued to work hard over the past year and a half to make sure this incredible piece of machinery maintains its impeccable safety record," said Miguel Rodriguez, then-director of the Stennis Propulsion Test Directorate. "All the efforts will pay off when we see the space shuttle Discovery lift off. To know we had such a big part in returning the or-



Employees crate the last of three space shuttle main engines tested at Stennis Space Center for the STS-114 mission of shuttle Discovery in 2005. The engine was shipped to Kennedy Space Center on Oct. 5, 2004. STS-114 was the Return to Flight mission following the loss of shuttle Columbia in 2003.

biter to flight will be a great reward."

The STS-114 mission launched July 26, 2005, and safely landed at Edwards Air Force Base, Calif., on Aug. 9, 2005.

Gene Goldman, then-manager of the Space Shuttle Main Engine Project Office at Marshall Space Flight Center in Huntsville, Ala., said, "There has been a tremendous effort by the team at Stennis, both civil servant and contractor, to ready the engines

for flight. Their diligent attention to detail is critical to the safe and reliable performance of the engines."

Rocketdyne Propulsion and Power, then a unit of the Boeing Co. of Canoga Park, Calif., manufactured the main engines. Pratt and Whitney, a United Technologies Company based in West Palm Beach, Fla., built the high-pressure turbopumps for the engines. NASA's Space Shuttle Main Engine Project Office administered the main engine program.

Educators visit Stennis for NASA workshop

High school educators from four states visited Stennis Space Center to participate in a High Schools United with NASA to Create Hardware workshop Sept. 27.

Educators from Louisiana, Mississippi, Alabama and Tennessee attended the HUNCH workshop, sponsored by NASA's Exploration Systems Mission Directorate. HUNCH seeks to inspire high school students to pursue careers in science, technology, engineering and mathematics by involving them in real-world work experiences.

"Through the HUNCH program, NASA engineers partner with high school students to develop a real product that can be used in the space program," explained Cheryl

Guilbeau, elementary and secondary projects coordinator for the Stennis Education Office. "It's an exciting opportunity for students to learn what it's like to do actual work in this important field."

HUNCH was launched in 2003 and expanded to include Stennis Space Center last year. During the recent Stennis workshop, educators were introduced to the HUNCH program and told how students at their schools can be involved. Participating educators now will submit project proposals to NASA. Schools selected to participate in the program will receive product specifications from NASA, as well as materials needed to construct prototype hardware models. They also will receive software needed to create computer-assisted designs.

Office of Diversity and Equal Opportunity

Understanding religion in federal workplace

As our workplace continues to become more diverse, it is important to understand what one's religious rights and freedoms are. Many times, misunderstandings arise due to a lack of knowledge that surrounds the issue.

Several years ago, the White House Office of the Press Secretary released guidelines to help individuals better understand their choices. What follows is a snapshot of the guidelines. The guidelines may be viewed in their entirety online at: <http://clinton2.nara.gov/WH/New/html/19970819-3275.html>

As a general rule, agencies may not regulate employees' personal religious expression on the basis of its content or viewpoint. In other words, agencies generally may not suppress employees' private religious speech in the workplace while leaving unregulated other private employee speech that has a comparable effect on the efficiency of the workplace – including ideological speech on politics and other topics. To do so would be to engage in presumptively unlawful content or viewpoint discrimination. However, agencies may, in their discretion, reasonably regulate the time, place and manner of all employee speech, provided such regulations do not discriminate on the basis of content or viewpoint.

In informal settings, such as cafeterias and hallways, employees are entitled to discuss their religious views with one another, subject only to the same rules of order as apply to other employee expression. If an agency permits unrestricted nonreligious expression of a controversial nature, it must likewise permit equally

controversial religious expression.

Employees generally may wear religious medallions over their clothes or so that they are otherwise visible. Typically, this alone will not affect workplace efficiency, and therefore, is protected.

Harassment. The examples below are intended to provide guidance on when conduct or words constitute religious harassment that should not be tolerated in the federal workplace:

- An employee repeatedly makes derogatory remarks to other employees with whom they are assigned to work about their faith or lack of faith. This typically will constitute religious harassment. An agency should not tolerate such conduct.
- A group of employees subjects a fellow employee to a barrage of sexually-related comments, knowing that the targeted employee will be discomforted and offended by the comments because of his or her religious beliefs. This typically will constitute harassment, and an agency should not tolerate it.
- A group of employees who share a common faith decides to work exclusively with people who share the employees' religious views. They engage in a pattern of verbal attacks on other employees who do not share their views, calling them heathens, sinners and the like. This conduct should not be tolerated.

Please contact Brian Hey 8-1249 for additional guidance.

NASA Stennis Space Center
Shooting For A Star



**Congratulations
and
good luck!**

Congratulations to the Jacobs Facility Operating Services Contract group for their achievement of Voluntary Protection Programs Merit Demonstration status!

Our remaining VPP audits are soon.
The Jacobs NASA Test Operations Group
will be audited on Oct. 18-21.
NASA's audit for VPP Star will be Nov. 1-4.

Coming in November

The Stennis Legends Series

Learn the history of rocket engine testing at Stennis Space Center firsthand as former employees return to recount remembrances from the Apollo and space shuttle eras. Hear the stories as they really happened. Schedule and details to be announced.

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NASA education team visits Stennis facility

Members of NASA's Education Coordinating Committee visited Stennis Space Center on Sept. 21, touring site facilities and receiving a briefing on preparations for testing next-generation rocket engines. The Education Coordinating Committee includes representatives from NASA Headquarters and its field centers. Members are responsible for developing education strategy for NASA and for helping to coordinate education efforts throughout the agency. The group's visit featured a briefing at the A-1 Test Stand about work under way in the A Test Complex to prepare for testing the J-2X engine, being developed to carry humans into deep space once more.

Stennis kicks off 2010 FIRST LEGO® League

Students from across Mississippi gathered at Stennis Space Center on Sept. 18 for a kickoff workshop for the 2010 FIRST (For Inspiration and Recognition of Science and Technology) LEGO® League competition.

FIRST LEGO® League (FLL) is a high-energy robotics competition for children ages 9 to 14. The focus is on celebrating science and technology through hands-on participation and learning. In partnership with the LEGO® Group, students use the LEGO MINDSTORMS™ system to build robots designed to complete particular tasks related to the competition theme.

At the Stennis kickoff event, student teams and their coaches/mentors reviewed this year's

Several Mississippi children examine the playing field for the 2010 FIRST LEGO® League (FLL) competition during a kickoff event at Stennis Space Center on Sept. 18. This year's FLL theme is "Body Forward," focusing on the cutting-edge field of biomedical engineering.

"Body Forward" challenge, which explores the cutting edge field of biomedical engineering. The challenge focuses on discovering innovative ways to repair injuries, overcome genetic predispositions and maximize the body's potential, with the intended purpose of leading happier and healthier lives.

Once robots are built, student teams will compete in the 2010 FLL Mississippi Championship Tournament, which is scheduled for Dec. 4 in Hattiesburg. They will be judged in four areas: robot performance, robot design, project presentation and FLL Core Values.

Stennis Space Center supports FIRST by providing mentors and training, as well as competition judges and event personnel.

